

REMARKS

The present Amendment amends claims 1, 4, 9, 17, and 21. Therefore, the present application has pending claims 1-21.

Claim for Foreign Priority

Applicants filed a claim for foreign priority under 35 U.S.C. §119, claiming the right for priority based on Japanese Patent Application No. 2002-198773. The claim for foreign priority and the certified copy of the priority document was filed on July 7, 2003. However, the Examiner has not acknowledged Applicants' claim for foreign priority or the receipt of the certified copy of the priority document. Therefore, Applicants respectfully request the Examiner's acknowledgement of Applicants' claim for foreign priority and receipt of the certified copy of the priority document.

35 U.S.C. §102 Rejections

Claims 1-21 stand rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent Application Publication No. 2002/0184618 to Bala, et al. ("Bala"). This rejection is traversed for the following reasons. Applicants submit that the features of the present invention as now more clearly recited in claims 1-21 are not taught or suggested by Bala whether taken individually or in combination any of the other references of record. Therefore, Applicants respectfully request the Examiner to reconsider and withdraw this rejection.

Amendments were made to the claims to more clearly describe features of the present invention. Specifically, amendments were made to the claims to more clearly recite that the present invention is directed to a data format conversion method, data format conversion equipment, a programming apparatus, a controller,

a controller management system, and a controller management method, as recited, for example, in claims 1-21.

The features of the present invention, as now more clearly recited in the claims, are not taught or suggested by any of the references of record, particularly Bala, whether taken individually or in combination with any of the other references of record.

Bala teaches networked client-server architecture for transparently transforming and executing application. However, there is no teaching or suggestion in Bala of the a data format conversion method, data format conversion equipment, a programming apparatus, a controller, a controller management system, and a controller management method as recited in claim 1-21 of the present invention.

Bala provides for native execution of an application on a client using code segments transmitted from a server over a network. The server includes an application code source, and a server code segment manager. The server may also include an application code transformation manager if the code source is not in the native binary format of the client. The client includes a client code segment manager, a code cache linker and manager, a code cache, and a CPU. When the client seeks to execute an application, code segments are transmitted from the server to the client and are stored in the code cache. The CPU then executes the code segments natively. When a code segment branches to a segment not in the cache, control passes to the client code segment manager, which requests the needed code segment from the server code segment manager of the server.

Claim 1

The present invention, as recited in claim 1, includes a data format conversion method including a step of inputting information including a convert direction for converting a program of a first data format to a program of a second data format. The method also includes a step of converting the program of the first data format to the program of the second data format, based on a conversion rule designated by the convert direction of the data format contained in the information. According to the present invention, the information further includes the program of the first data format. The prior art does not disclose all of these features.

One feature of the present invention, as recited in claim 1 includes a step of inputting information including a convert direction for converting a program of a first data format to a program of a second data format. Bala does not disclose this feature. For example, as described in the abstract, Bala merely discloses where the server may include an application code transformation manager if the code source is not in the native binary format of the client. However, there is no teaching or suggestion in Bala of inputting information including a convert direction for converting a program of a first data format to a program of a second data format, in the manner claimed.

Another feature of the present invention, as recited in claim 1, includes a step of converting the program of the first data format to the program of the second data format, based on a conversion rule designated by the convert direction of the data format contained in the information. Bala does not disclose this feature. For example, as previously discussed, Bala merely discloses in the abstract where the server may include an application code transformation manager if the code source is

not in the native binary format of the client. By way of further example, as described in paragraph [0054], Bala discloses where a server 12 needs to know which application is being executed, as well as the native binary format required by the client 14. Bala assumes that this information has already been provided to the server 12 via a prior initialization dialog. These features of Bala are not the same as converting a program from one format to another, based on the convert direction of a data format, as in the present invention.

Therefore, Bala fails to teach or suggest “inputting information including a convert direction for converting a program of a first data format to a program of a second data format” as recited in claim 1.

Furthermore, Bala fails to teach or suggest “converting the program of the first data format to the program of the second data format based on a conversion rule designated by the convert direction of a data format contained in the information” as recited in claim 1.

Claim 2

One feature of the present invention, as recited in claim 2 includes where the convert direction designates one of a plurality of conversion rules for executing conversion to a plurality of different second data formats, so as to correspond to at least one first data format. Bala does not disclose this feature. To support the assertion that Bala teaches this feature, the Examiner cites paragraph [0049], and asserts that a conversion rule is checked to see if the code is current. However, neither the cited text, nor any other portions of Bala teach or suggest the claimed feature. For example, paragraph [0049] is describes the execution of a program

including the determination of whether a code segment containing the entry point of an application exists in a code cache, and if it exists, whether the code segment is current. This is quite different from the present invention, which provides where the convert direction designates one of a plurality of conversion rules.

Therefore, Bala fails to teach or suggest “wherein said convert direction designates one of a plurality of conversion rules for executing conversion to a plurality of different second data formats in such a fashion as to correspond to at least one first data format” as recited in claim 2.

Claim 3

One feature of the present invention, as recited in claim 3 includes where the conversion rule is acquired through a communication network. Bala does not disclose this feature. To support the assertion that Bala teaches this feature, the Examiner cites paragraphs [0035] to [0037]. However, the cited text describes the client-server configuration illustrated in Fig. 1, which includes an application code transformation manager 20 that is responsible for transforming segments of application code source 16 into binary code segments that can be executed natively by the client. There is no teaching or suggestion in the cited text, or any other portions of Bala, of acquiring a conversion rule in the manner claimed.

Therefore, Bala fails to teach or suggest “wherein said conversion rule is acquired through a communication network” as recited in claim 3.

Furthermore, *** fails to teach or suggest “” as recited in claim ***.

Claims 4-8

Claims 4-6 recite features that are similar to the features recited in claims 1-3. Therefore, Applicants submit that claims 4-6 are allowable over the Bala reference for at least the reasons discussed above regarding claims 1-3.

One feature of the present invention, as recited in claim 7 includes where the memory means provided outside is connected to the communication network in such a way as to communicate, or is provided to a controller having an embedded computer connected to the communication network in such a manner as to communicate. Bala does not disclose this feature. In the present invention, the conversion rule is owned by the controller itself. That is to say, without the assistance of any other apparatus, the controller includes the converting rule for describing a procedure for processing by the controller itself. To the contrary, Bala only discloses where the client 14 includes an Application Code Transformation Manager 20 and where the server 12 obtains the native binary format required by the client 14. This is not the same as the claimed feature.

Therefore, Bala fails to teach or suggest "wherein said memory means provided outside is memory means connected to said communication network in such a manner as to be capable of communication, or memory means provided to a controller having an embedded computer connected to said communication network in such a manner as to be capable of communication" as recited in claim 7.

Claims 9-16

Claims 9-16 recite features that are similar to the features recited in claims 1-3. Therefore, Applicants submit that claims 9-16 are allowable over the Bala reference for at least the reasons discussed above regarding claims 1-3.

In addition, one feature of the present invention, as recited in claim 9 includes where the conversion program converts the program to a program of a third data format different from the first and second data formats, and then converts the program to the second data format. Bala does not disclose this feature. For example, Bala merely discloses that a server generates native binary code in accordance with a CPU type of client. There is no teaching or suggestion in Bala of a converting the program to a program of a third data format, in the manner claimed.

Another feature of the present invention, as recited in claim 11, includes where the convert execution means includes a virtual machine and intermediate conversion means for converting a program to a third data format. Bala does not disclose this feature. Bala only discloses an Application Code Transformation Manger, which is executed by a server (as shown in Fig. 2B, for example). This is not the same as a virtual machine, as claimed.

Yet another feature of the present invention, as recited in claim 12, includes where the virtual machine is a virtual machine of Java. Bala does not disclose where a virtual machine, as in the present invention, is a virtual machine of Java.

Therefore, Bala fails to teach or suggest “wherein said conversion program converts the program to a program of a third data format different from the first and second data formats, and then converts the program to the second data format” as recited in claim 9.

Furthermore, Bala fails to teach or suggest “wherein said convert execution means comprises a virtual machine and intermediate conversion means for converting a program etc. to a third data format” as recited in claim 11.

Even further, Bala fails to teach or suggest “wherein said virtual machine is a virtual machine of Java” as recited in claim 12.

Claims 17-21

Claims 17-21 recite features that are similar to the features recited in claims 1-3. Therefore, Applicants submit that claims 17-21 are allowable over the Bala reference for at least the reasons discussed above regarding claims 1-3.

In addition, one feature of the present invention, as recited in claim 17 includes where the controller includes a function of outputting the program of the first data format stored in the memory means in response to a request input through the communication network. That is to say, the controller of the present invention includes program data for controlling itself. Accordingly, it is not necessary to contain original programs in other storage media. Bala does not disclose this feature. To the contrary, Bala merely discloses where Application Code Source 18 is stored in the server, but it does not disclose where the source is provided to the client (see, for example, paragraphs [0032] and [0010] of Bala).

Another feature of the present invention, as recited in claim 18, includes a data format converter for inputting the program of the first data format created by the programmer unit, for converting the program to a program of a second data format, and for outputting the program to said controller. As previously discussed, Bala does not disclose this feature. More specifically, Bala does not teach or suggest where

the controller of the present invention includes program data for controlling itself, in the manner claimed.

Therefore, Bala fails to teach or suggest where the controller includes “a function of outputting the program of the first data format stored in said memory means in response to a request input through said communication network” as recited in claim 17.

Furthermore, Bala fails to teach or suggest “a data format converter for inputting the program of the first data format created by said programmer unit, converting the program to a program of a second data format and outputting the program to said controller” as recited in claim 18.

Therefore, Bala does not teach or suggest the features of the present invention, as recited in claims 1-21. Accordingly, reconsideration and withdrawal of the 35 U.S.C. §102(e) rejection of claims 1-21 as being anticipated by Bala are respectfully requested.

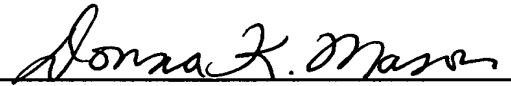
The remaining references of record have been studied. Applicants submit that they do not supply any of the deficiencies noted above with respect to the references used in the rejection of claims 1-21.

In view of the foregoing amendments and remarks, Applicants submit that claims 1-21 are in condition for allowance. Accordingly, early allowance of claims 1-21 is respectfully requested.

To the extent necessary, Applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, or credit any overpayment of fees, to the deposit account of Mattingly, Stanger, Malur & Brundidge, P.C., Deposit Account No. 50-1417 (referencing attorney docket no. 500.42830X00).

Respectfully submitted,

MATTINGLY, STANGER, MALUR & BRUNDIDGE, P.C.

A handwritten signature in cursive script, reading "Donna K. Mason", is written over a horizontal line.

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